CLAIMS

1. Suppressive and/or regulative human $CD4^+CD25^+$ T cells.

2. The T cells according to claim 1 which are isolatable from human peripheral blood, preferably by suitable monoclonal antibodies and using magnetic separation or immunoadsorption methods.

3. The cells according to claim 1 or 2 which are CTLA-4^+ and possess regulatory properties.

4. A method for expanding $CD4^+CD25^+$ T cells as defined in any one of claims 1 to 3, which method comprises stimulating the cells with a T cell stimulating agent or with antigen-presenting cells *ex vivo* and *in vivo*.

5. The method of claim 4, wherein the T cell stimulating agent is a composition comprising

(a) anti-CD3 and/or anti-CD28 ligands/monoclonal antibodies, including superagonistic antibodies,

(b) a ligand/antibody to T cell receptors on the surface of $CD4^+CD25^+$ T cells or to T cell receptor components; or

(c) MHC-peptide complexes binding to the T cell receptors expressed on the surface of regulatory T cells; or

(d) a phorbolester and a calcium ionophor.

6. The method of claim 4 wherein the antigen-presenting cells are selected from autologous, non-autologous, artificial antigen-presenting cells, etc., preferably the antigen presenting cells are dendritic cells.

7. The method according to any one of claims 4 to 6, wherein the T cell stimulating agent and antigen-presenting cells are used together with IL2 and/or IL-5, IL-7 and/or IL-9, IFN-α and/or IL-10.

8. Expanded human $CD4^+$ $CD25^+$ T cells obtainable by the method according to any one of claims 4 to 7.

9. The expanded human $CD4^+CD25^+$ T cells of claim 8 which are fixated $CD4^+CD25^+$ cells, preferably obtainable by *ex vivo* treatment with paraformaldehyde.

10. A pharmaceutical composition comprising the human $CD4^+CD25^+$ T cells according to any one of claims 1 to 3, 8 or 9.

11. Use of $CD4^+CD25^+$ T cells according to any one of claims 1 to 3, 8 or 9 for preparing a regulatory medicament.

12. A method to identify, monitor and/or remove $CD4^+CD25^+$ T cells from human blood and other tissues *ex vivo* or *in vivo*, which method comprises
(i) utilizing agents/ligands specifically binding to the CD4, and/or CD25, and/or CTL-A4 (CD154) entities on the T cells, preferably anti-CD4 and/or anti-CD25, and/or anti-CTL-A4 antibodies, and/or
(ii) utilizing immunoadsorption methods; and/or
(iii) utilizing a stimulating agent or antigen presenting cells as defined in claims 4 to 7.

13. Use of a T cell stimulating agent or antigen presenting cells as defined in claims 5 to 7 for preparing an agent to induce regulatory $CD4^+CD25^+$ T cells *in vivo*, preferably for preparing an agent for treating autoimmune diseases in a patient.

14. Use of $CD4^+CD25^+$ T cells according to any one of claims 1 to 3, 8 or 9
(a) in assays that will allow to identify other growth and/or functionally modifying (inhibitory/enhancing)/apoptotic or anti-apoptotic factors

(b) for identifying molecules expressed by the $CD4^+CD2^+$ T cells including identification of novel molecules on said cells, or if presenting molecules which are deemed pharmaceutically active, or

(c) for identifying precursor cells or progeny of the regulatory CD4+CD25+ T cells.

15. Use of the enriched $CD4^+CD25^+$ T cells of claims 1 to 3 or the expanded T cells of claim 8, or the fixated T cells of claim 9 for preparing an agent for adoptive transfer therapy, an agent for treating diseases with enhanced immunity including but not limited to autoimmune diseases, or an agent for preventing/treating transplantation reactions such as graft versus host disease, graft rejections, etc.

16. A method for adoptive transfer therapy which comprises injecting/infusing back into the patients enriched/expanded autologous or non-autologous regulatory $CD4^+CD25^+$ T cells according to any one of claims 1 to 3, 8 or 9 to prevent or treat any immune reactions that are too strong and/or pathogenic, or to prevent/treat transplantation reactions such as graft versus host disease and graft rejections.

17. A method for preparing $CD4^+CD25^+$ T cells with a particular desired antigen-specific T cell receptor which comprises

(i) activating/stimulating/expanding the $CD4^+CD25^+$ T cells according to any one of claims 1 to 3 with antigen presenting cells, preferably immature or mature dendritic cells (DC), presenting said antigen *in vitro* or *in vivo*; or

(ii) utilizing a ligand/antibody to a particular T cell receptor expressed on (subsets of) $CD4^+CD25^+$ regulatory T cells, or a MHC-peptide complex binding to a particular T cell receptor on (subsets of) $CD4^+CD25^+$ T cells.

18. The method of claim 17, wherein the antigen-presenting cells are pulsed/loaded/fed with tissue or any defined or undefined antigens, wherein

(i) the defined antigens preferably are autoantigens (including, but not limited to, desmoglein 3 in the case of pemphigus vulgaris, melanA or tyrosinase in case of vitiligo; thyreoglobulin in case of thyreoiditis), foreign antigens (including pathogen-derived antigens such as Hepatitis C), or alloantigens/transplantation antigens, and

(ii) the undefined antigens preferably are tissue or cell-derived antigens (including, but not limited to, antigens which are in the form of necrotic or apoptotic cells or tissue derived RNA or hybrids between cells of interest and dendritic cells/antigen presenting cells, other forms of delivery of undefined antigens into dendritic cells or other antigen presenting cells) or pathogen-derived antigens.

19. $CD4^+CD25^+$ T cells having a particular desired antigen-specific T cell receptor and being obtainable by the method of claim 17 or 18, or by transfection of a T cell receptor of desired antigen specificity into *ex vivo* isolated or expanded T cells.

20. Pharmaceutical composition comprising the T cells of claim 19, preferably said pharmaceutical composition being suitable to treat diseases with enhanced immunity including, but not limited to, autoimmune diseases, graft versus host disease and graft rejections.

21. Use of agents specifically binding to the CD4 and/or CD25 and/or CTL-A4 (CD154) entities on the T cells, including but not limited to ligands/antibodies, such as anti-CD25 and/or anti-CTL-A4 mAb, or antibodies or MHC-peptide complexes or other ligands binding to T cell receptors on (subsets of) $CD4^+CD25^+$ T cells for preparing a medicament for removal or functional impairment of $CD4^+CD25^+$ T cells *in vivo* in order to enhance immune responses, including dampen regulation by $CD4^+CD25^+$ T cells *in vivo*, for example, to enhance tumor immunity.